REPLACEMENT DRAWING

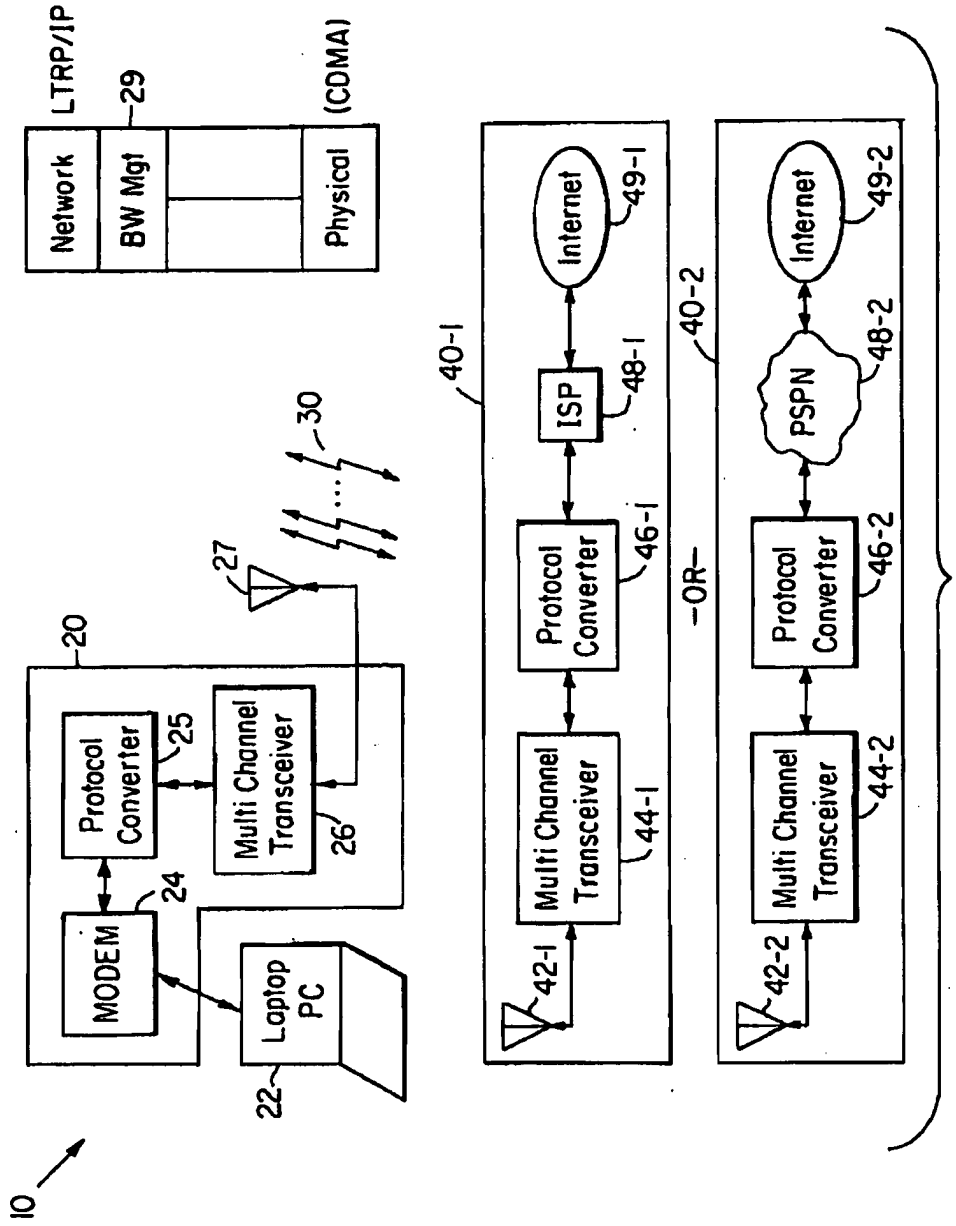


FIG. 1

REPLACEMENT DRAWING

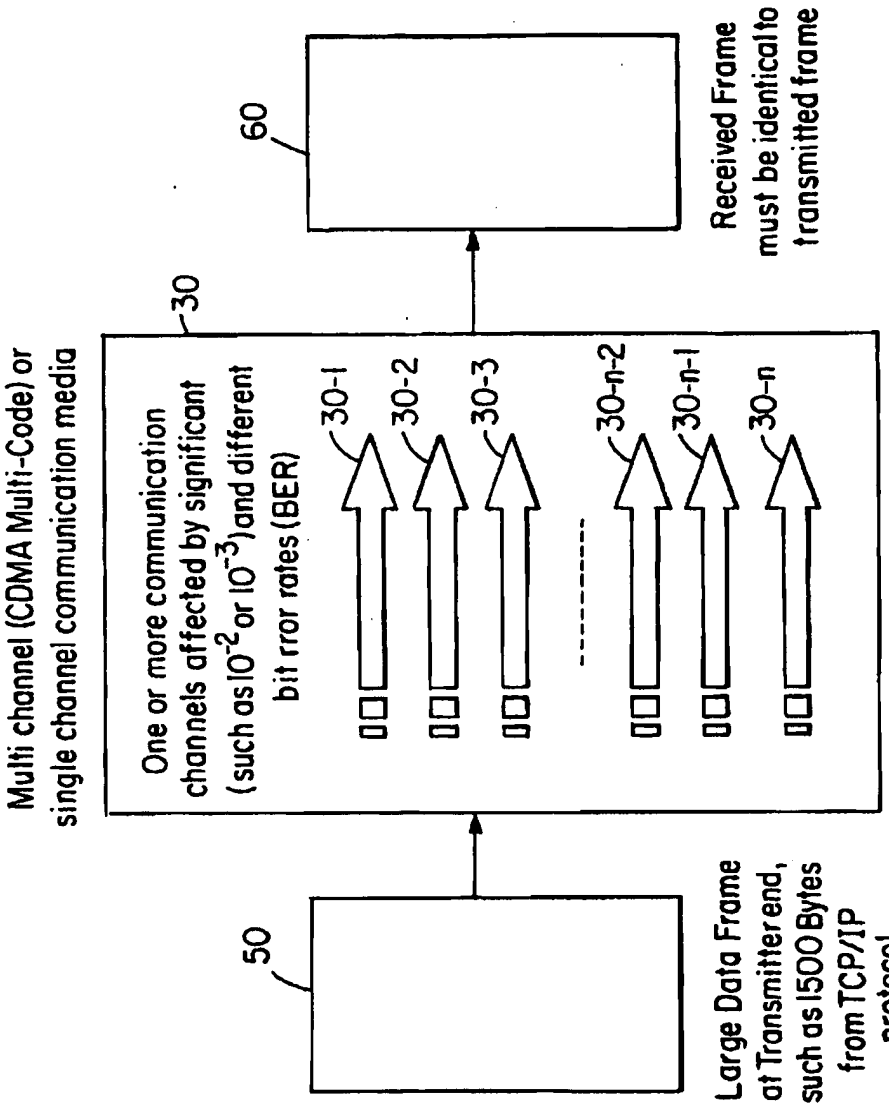


FIG. 2

REPLACEMENT DRAWING

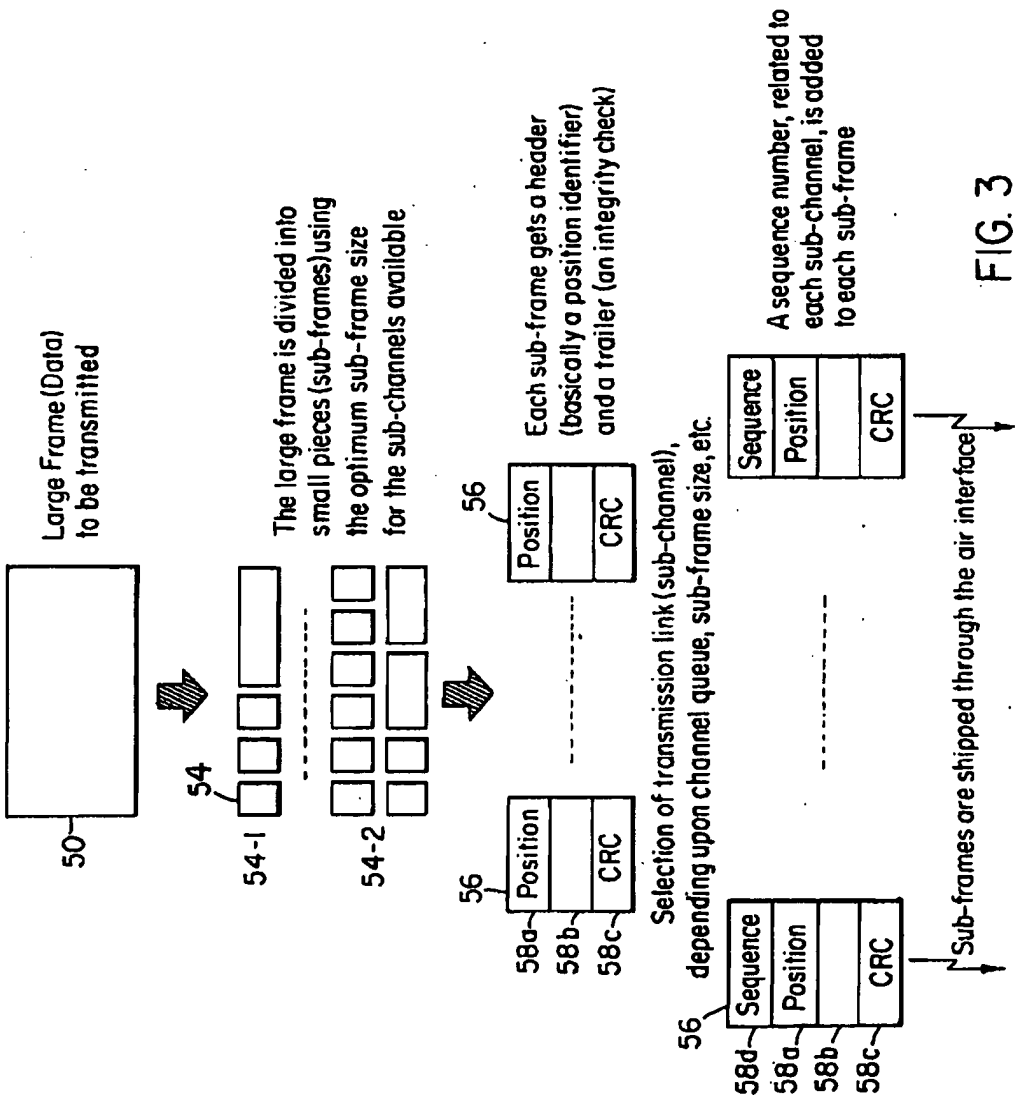
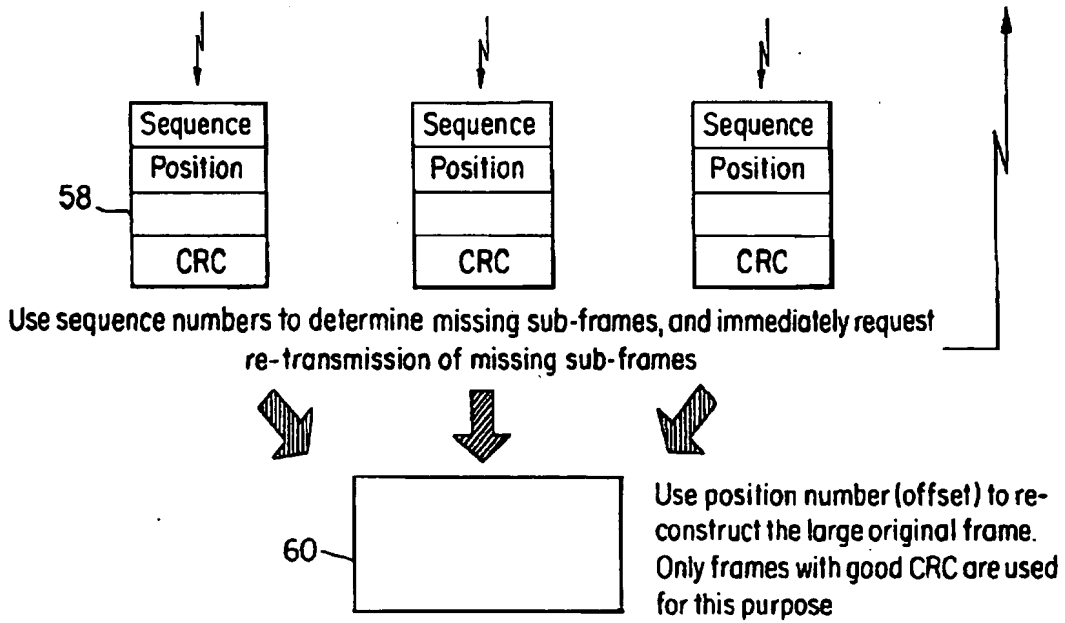


FIG. 3



Check if any piece of the large frame is still missing when the end-of-frame command is received. If any is still missing, request retransmission of the sub-frame at position, specifying length.

Both Sender and Receiver know the ratio of sub-frames received with errors and received without errors. They also know the average sub-frame length for each sub-channel. Then they can update the optimum sub-frame size for each sub-channel

FIG. 4

REPLACEMENT DRAWING

REPLACEMENT DRAWING

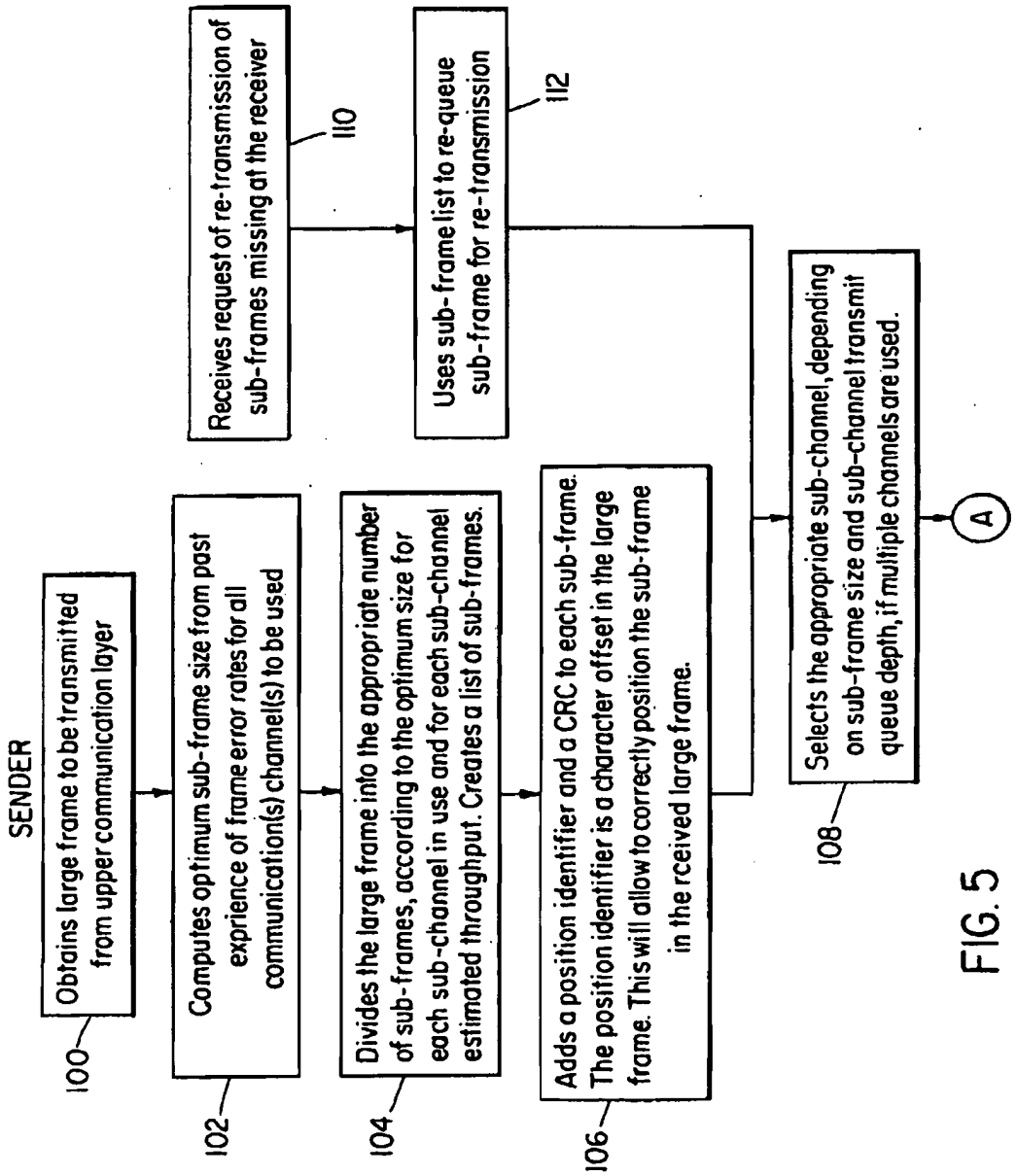


FIG. 5

REPLACEMENT DRAWING

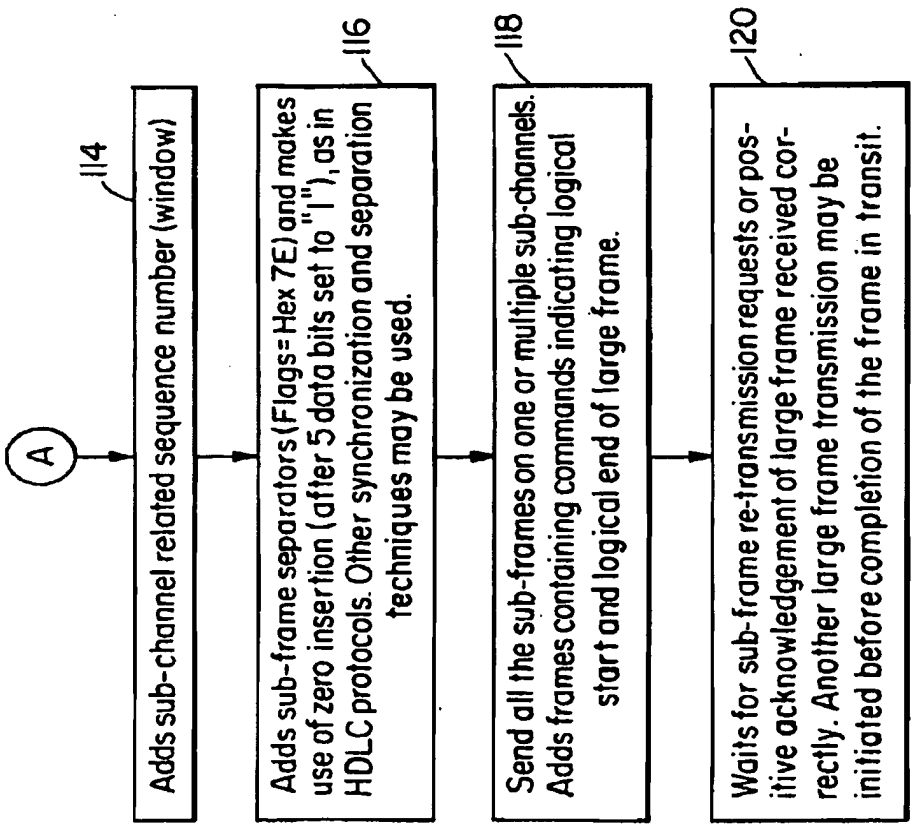


FIG. 6

REPLACEMENT DRAWING

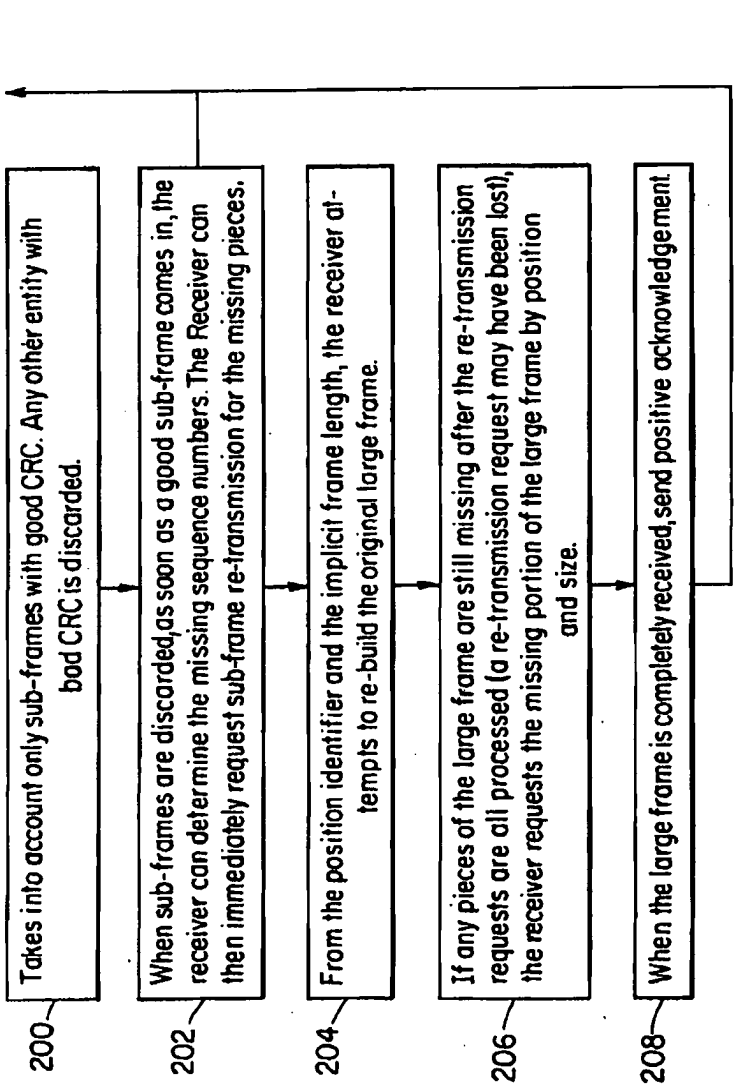


FIG. 7

Sub-Frame Structure

Field	Proposed Number of Bits
Data/Command Indicator	1
Large Frame sequence number (Window of 2)	1
Character offset of sub-frame into large frame	11
Sub-Channel sequence number (Window of 7)	3
Data	0 to 2048
CRC	12
Shared Flag (Hex 7E)	8

This sub-frame structure is suitable for sub-channel utilization (Multi-link) use on media with high Bit Error Rates (BER)

FIG. 8

REPLACEMENT DRAWING

REPLACEMENT DRAWING

One bit error every n bits on "raw" sub-channels		# of Sub-Channels with same characteristics	Effective sub-channel transfer rate	Cumulative Sub-Channel transfer rates
50	High	2	2000	4000
500	Med	5	6000	30000
5000	Low	13	8000	104000
TOTAL		20		138000

FIG. 9

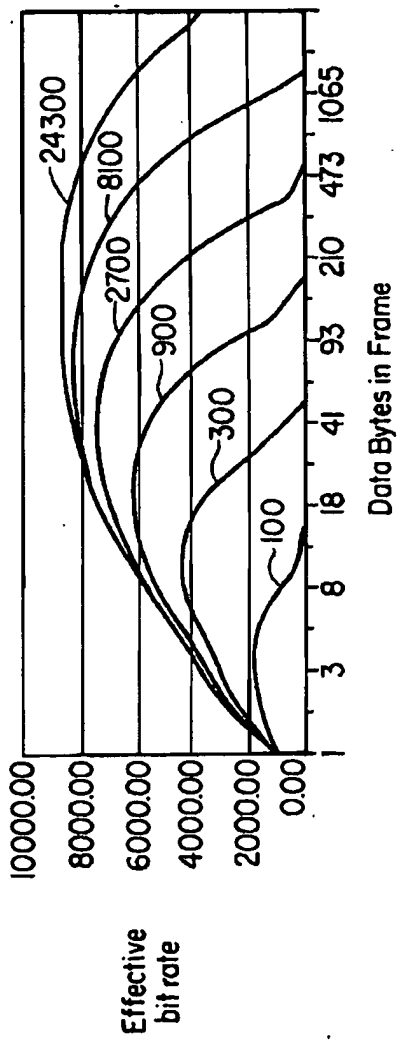


FIG. 10

REPLACEMENT DRAWING

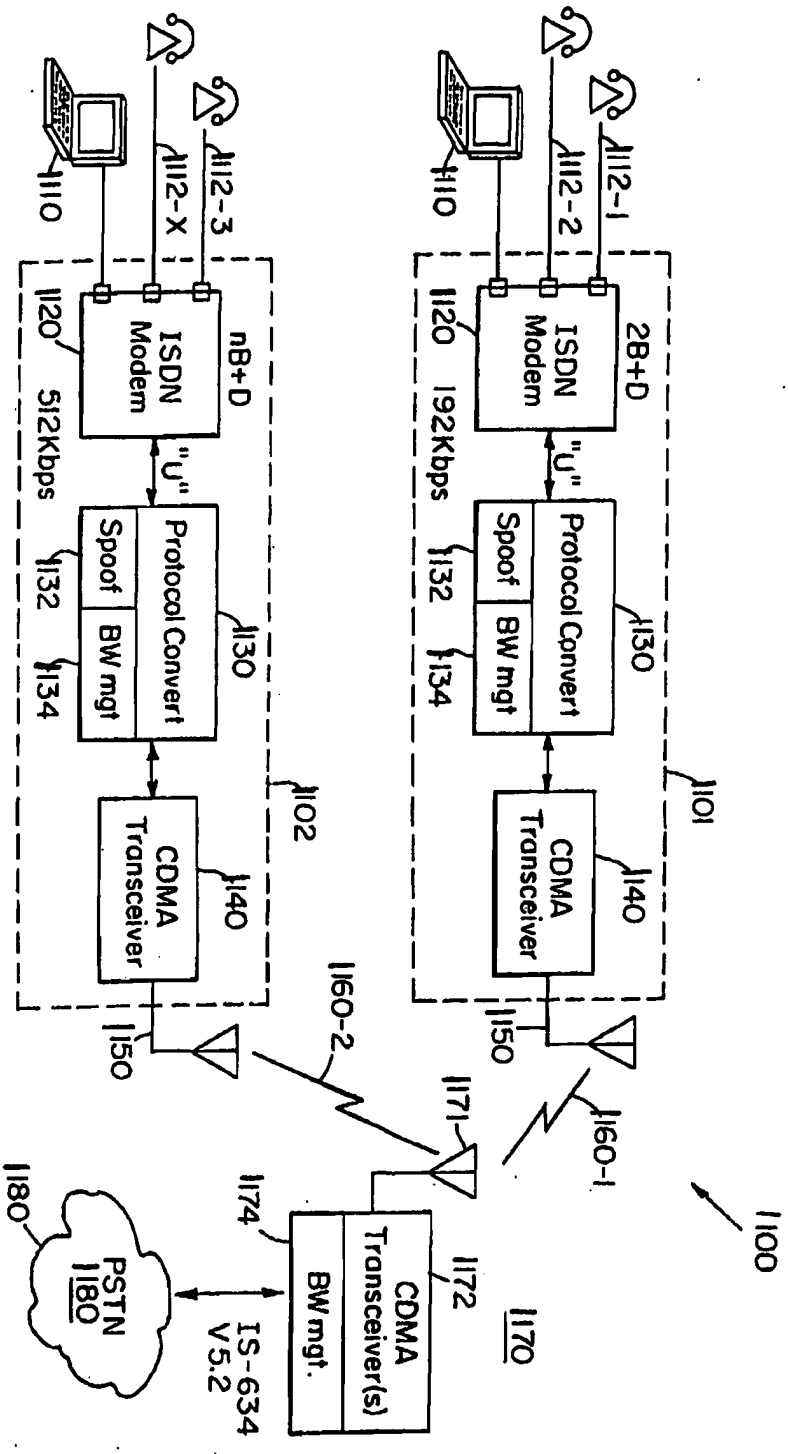


FIG. 11

REPLACEMENT DRAWING

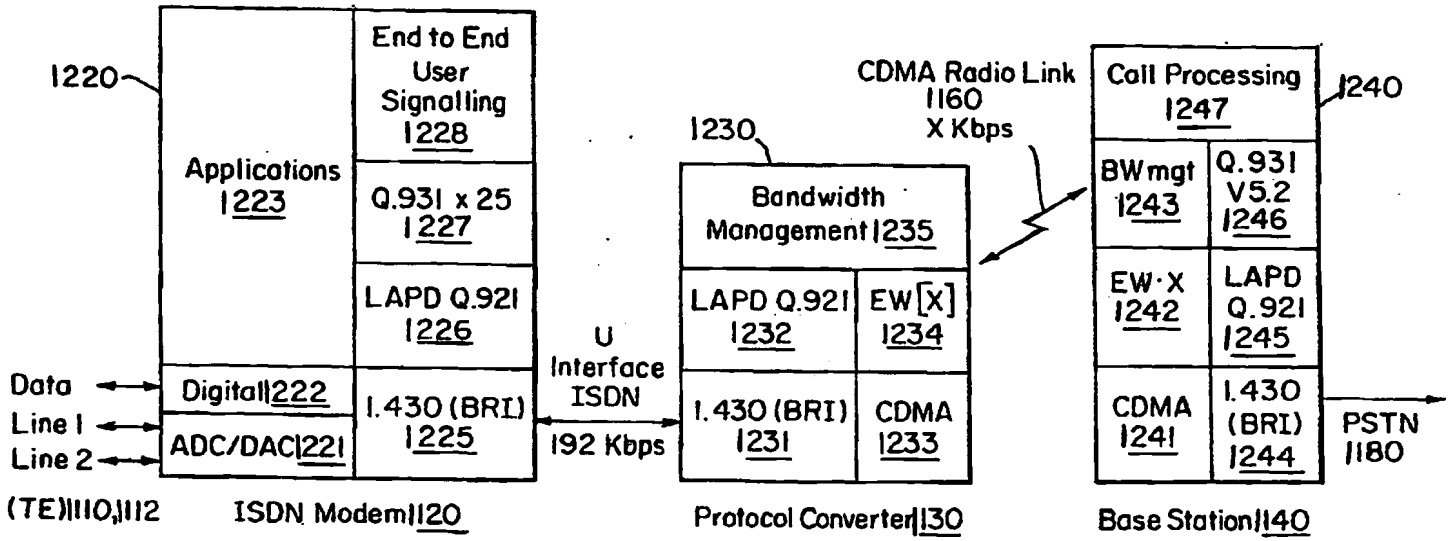


FIG.12

REPLACEMENT DRAWING

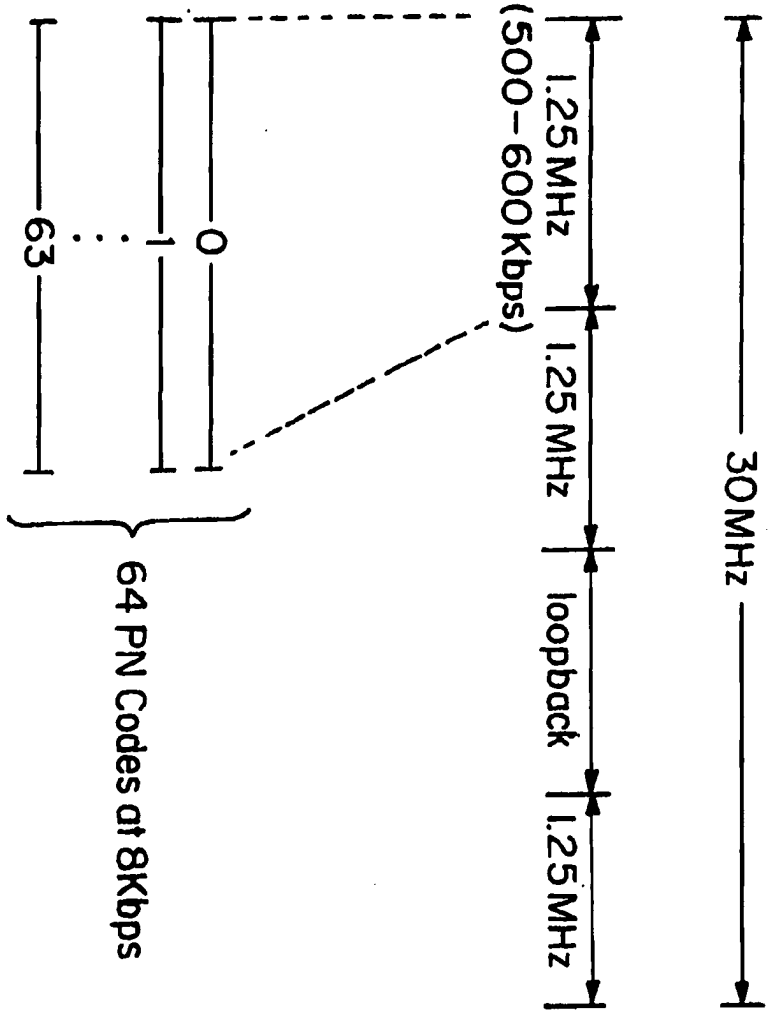


FIG.13

REPLACEMENT DRAWING

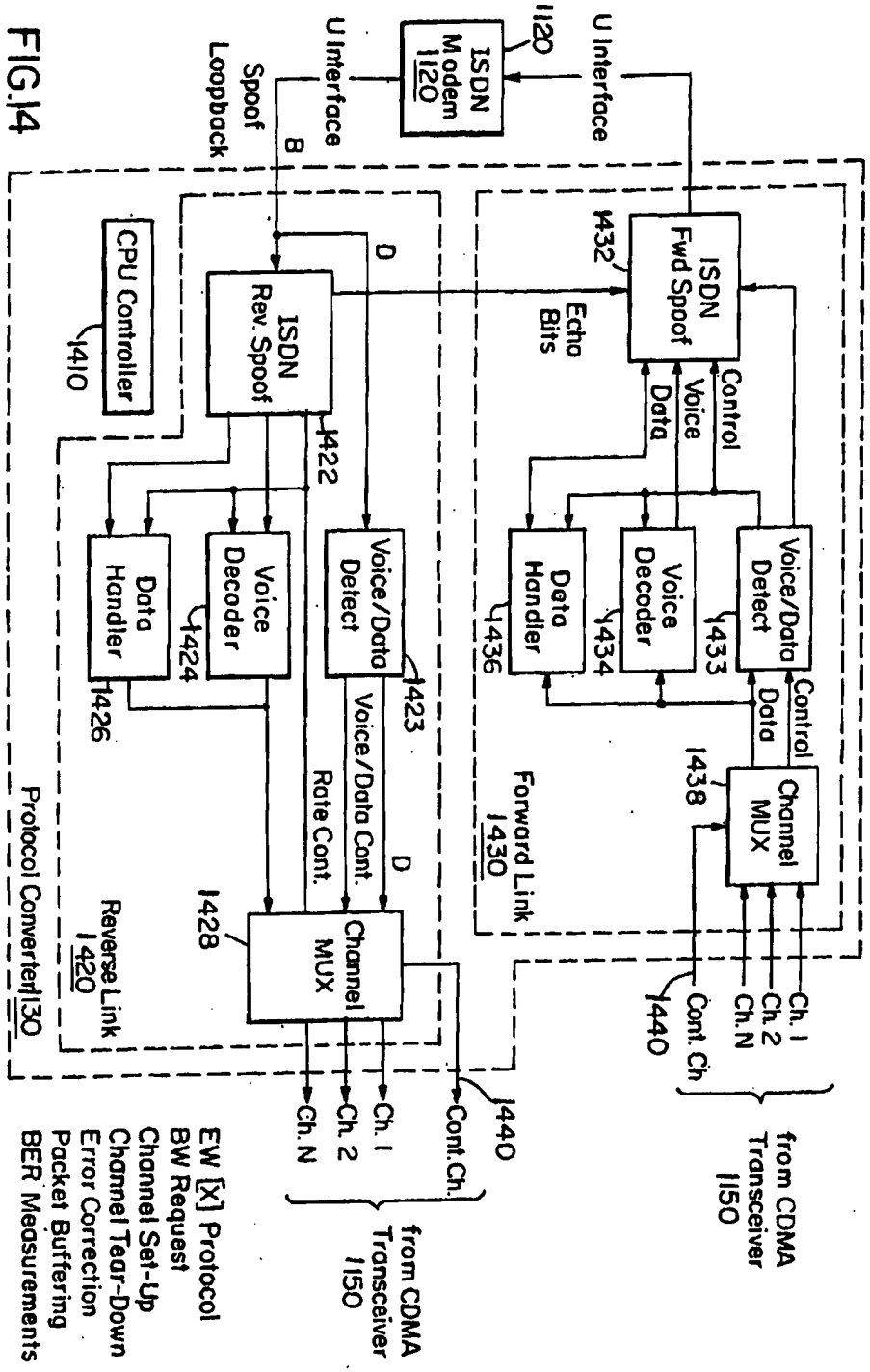


FIG.14

REPLACEMENT DRAWING

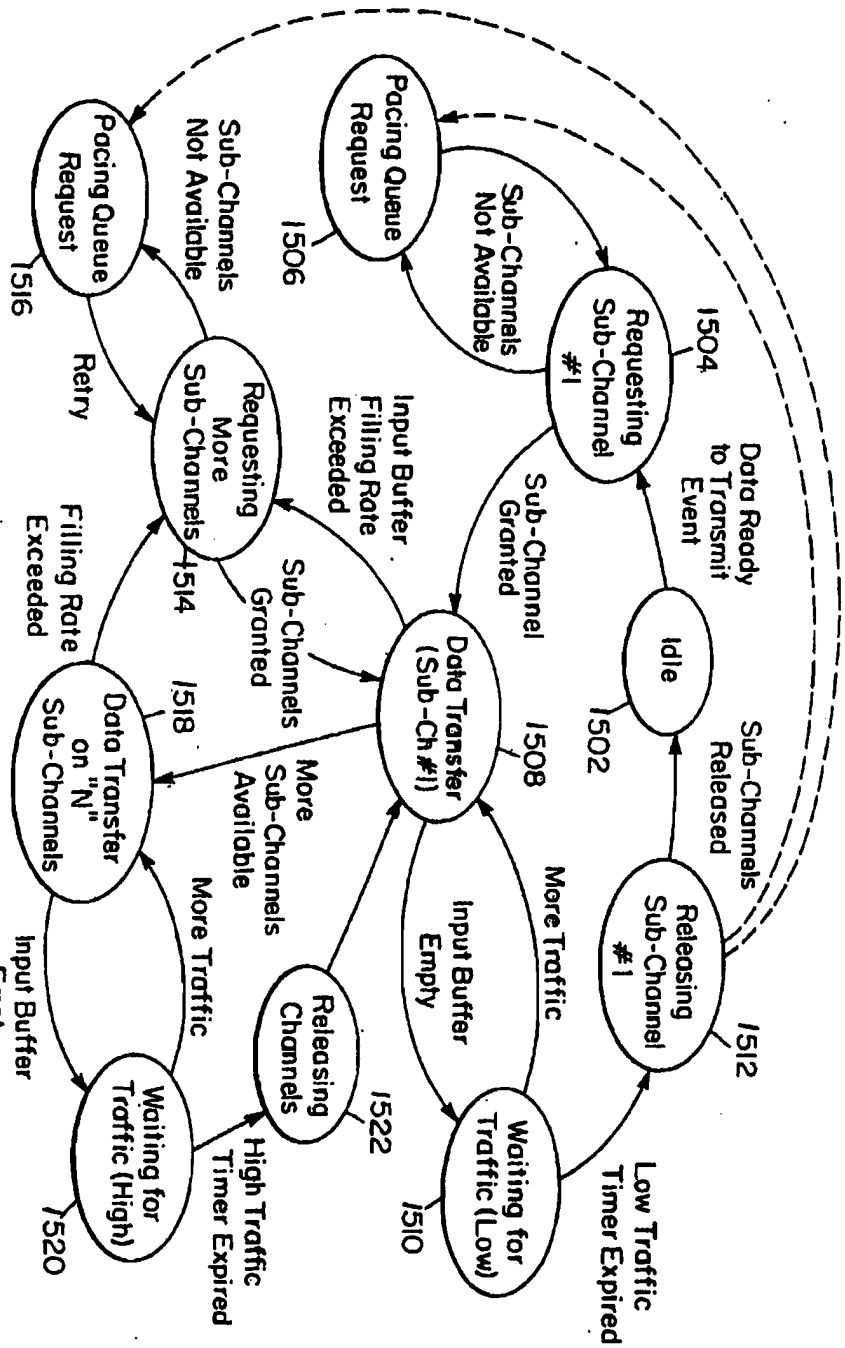


FIG. 15

REPLACEMENT DRAWING

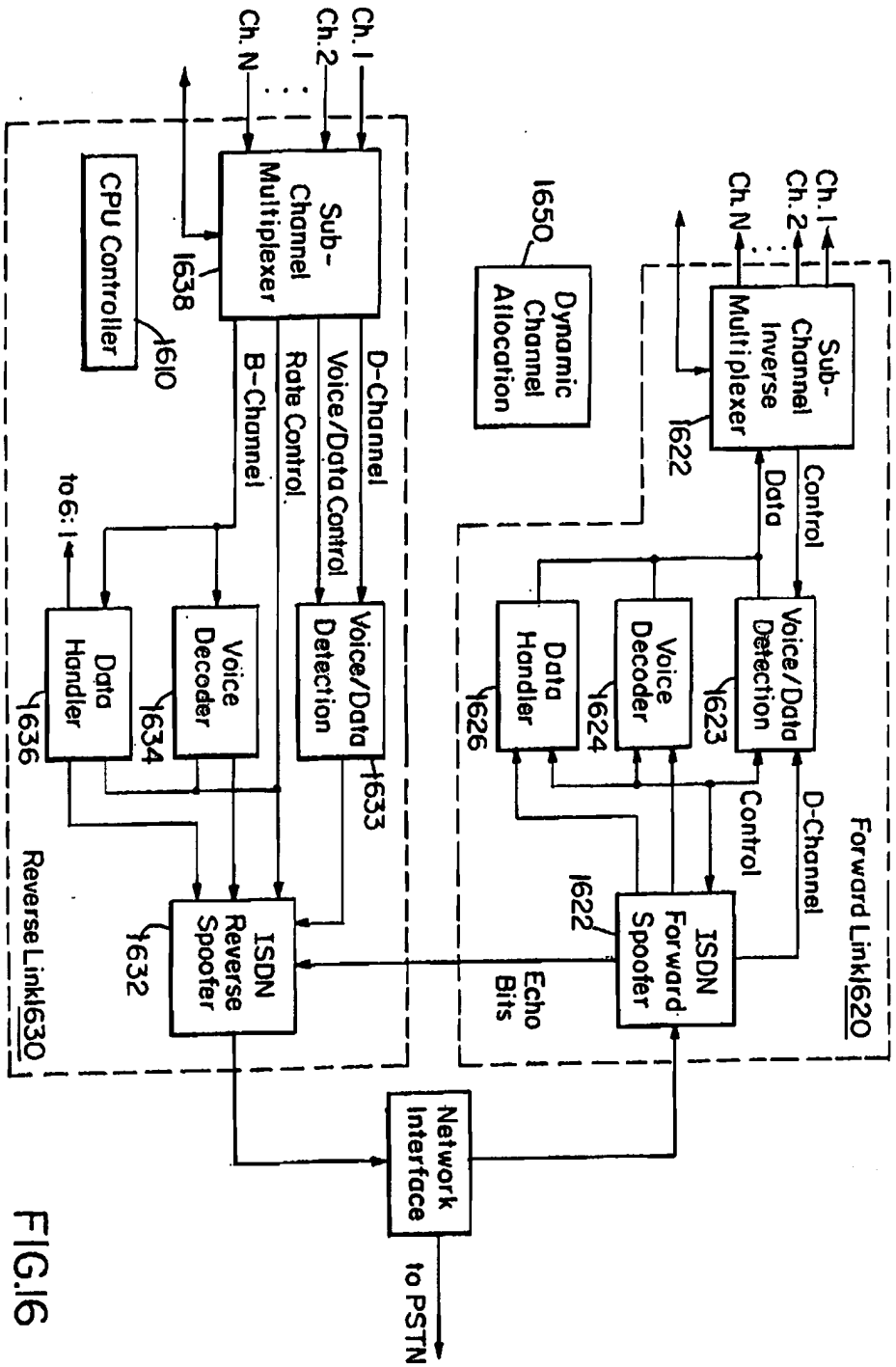


FIG.16

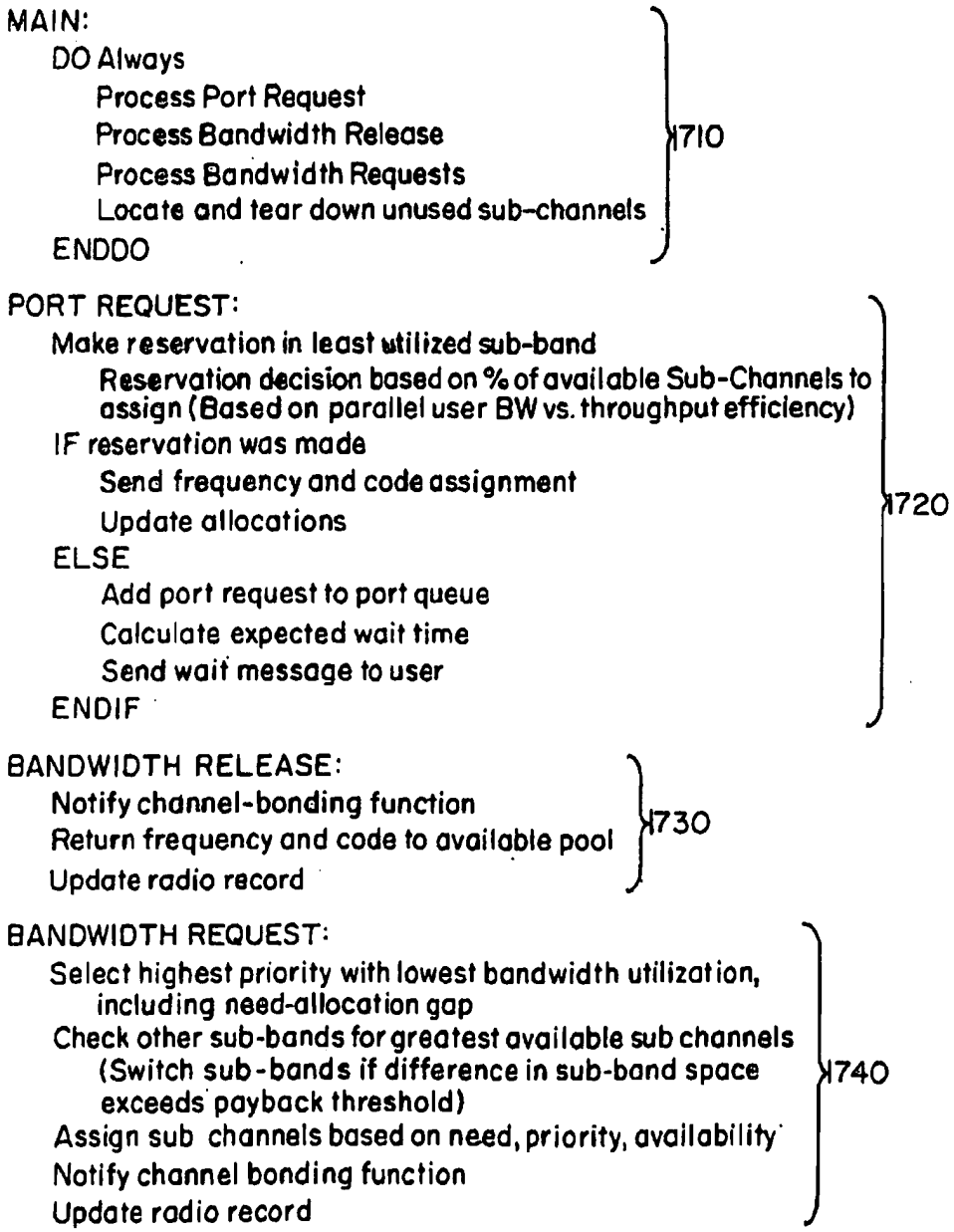

MAIN:
DO Always
Process Port Request
Process Bandwidth Release
Process Bandwidth Requests
Locate and tear down unused sub-channels
ENDDO
1710
PORT REQUEST:
Make reservation in least utilized sub-band
Reservation decision based on % of available Sub-Channels to assign (Based on parallel user BW vs. throughput efficiency)
IF reservation was made
Send frequency and code assignment
Update allocations
ELSE
Add port request to port queue
Calculate expected wait time
Send wait message to user
ENDIF
1720
BANDWIDTH RELEASE:
Notify channel-bonding function
Return frequency and code to available pool
Update radio record
1730
BANDWIDTH REQUEST:
Select highest priority with lowest bandwidth utilization, including need-allocation gap
Check other sub-bands for greatest available sub channels (Switch sub-bands if difference in sub-band space exceeds payback threshold)
Assign sub channels based on need, priority, availability
Notify channel bonding function
Update radio record
1740

FIG.17

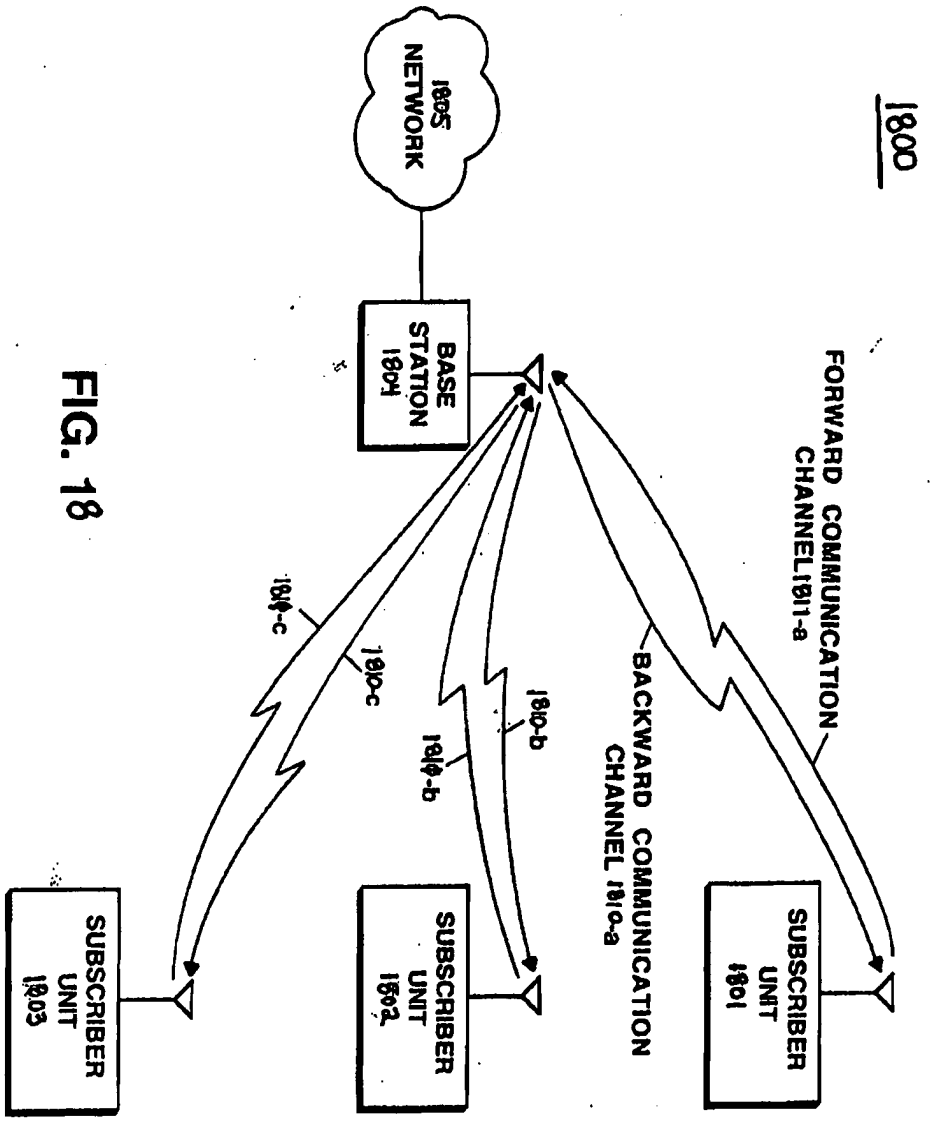

1800
1805 NETWORK
BASE STATION 1804
FORWARD COMMUNICATION CHANNEL 1811-a
BACKWARD COMMUNICATION CHANNEL 1810-a
1810-b
1810-c
1814-b
1814-c
SUBSCRIBER UNIT 1801
SUBSCRIBER UNIT 1802
SUBSCRIBER UNIT 1803

FIG. 18

REPLACEMENT DRAWING

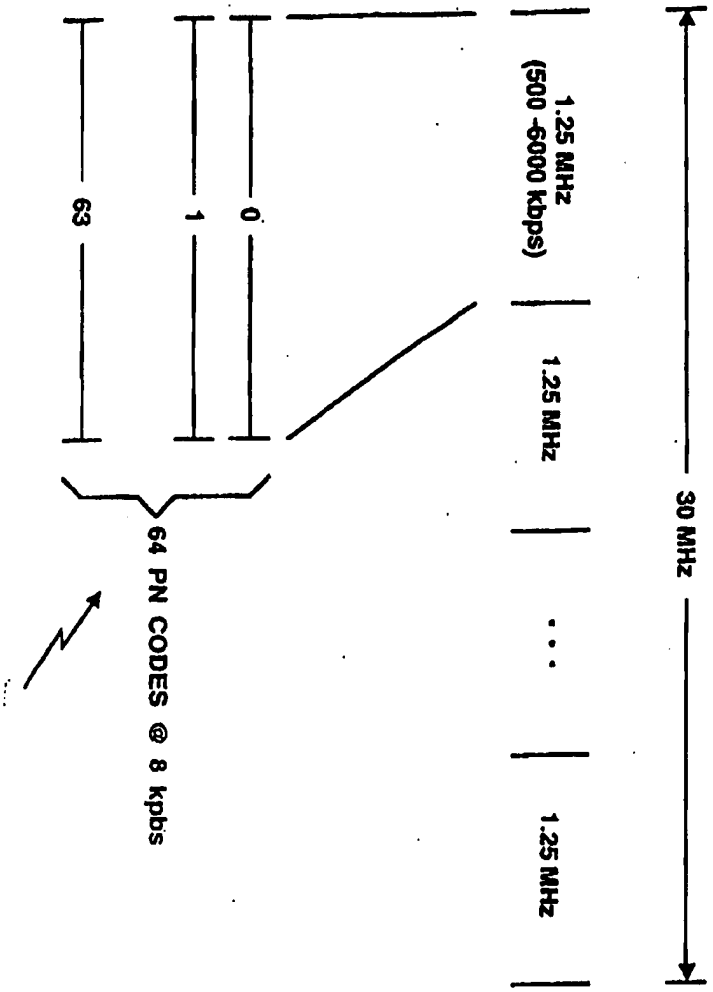


FIG. 10

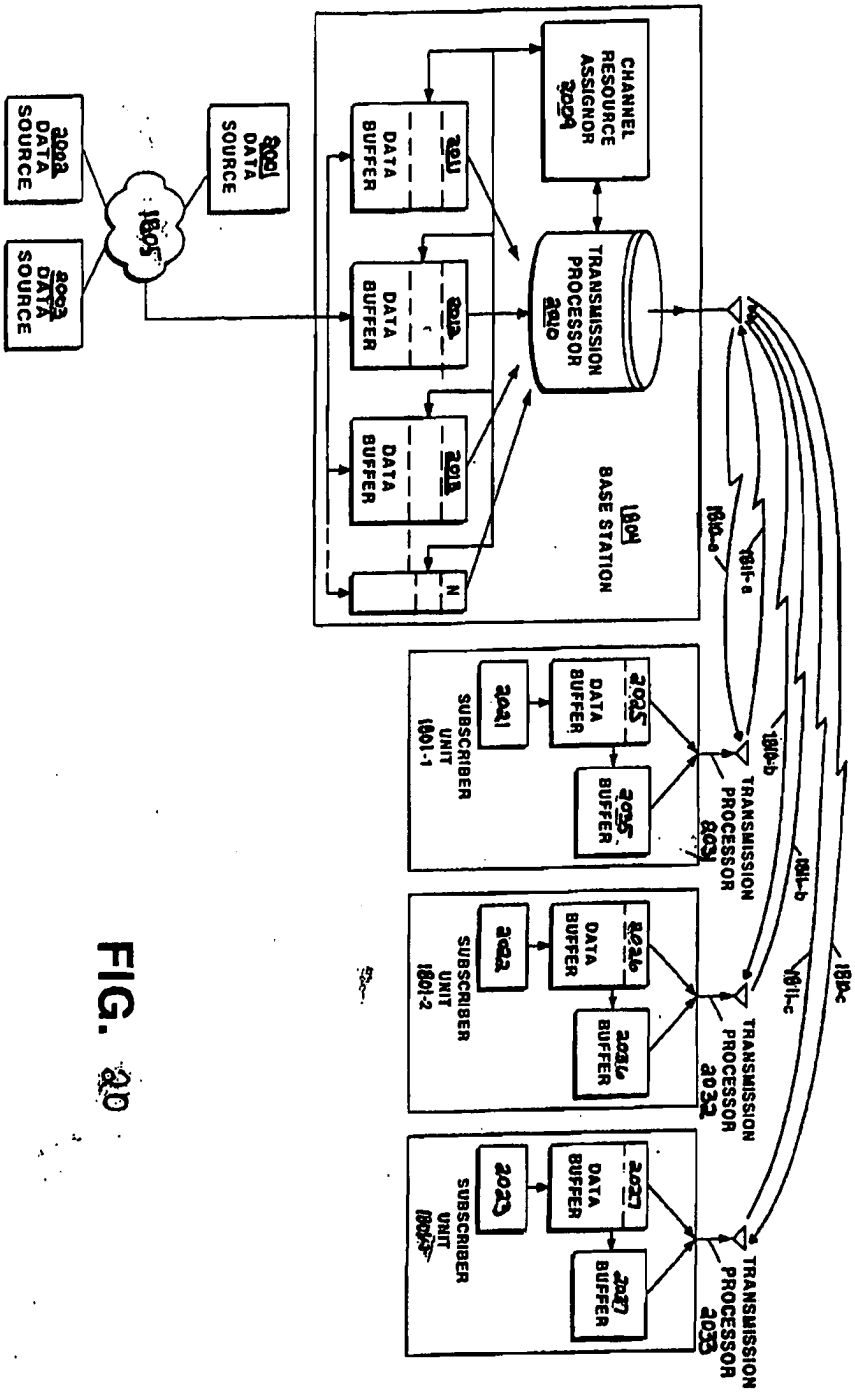

CHANNEL RESOURCE ASSIGNOR
TRANSMISSION PROCESSOR
DATA BUFFER
BASE STATION
DATA SOURCE
SUBSCRIBER UNIT
TRANSMISSION PROCESSOR

FIG. 20

REPLACEMENT DRAWING

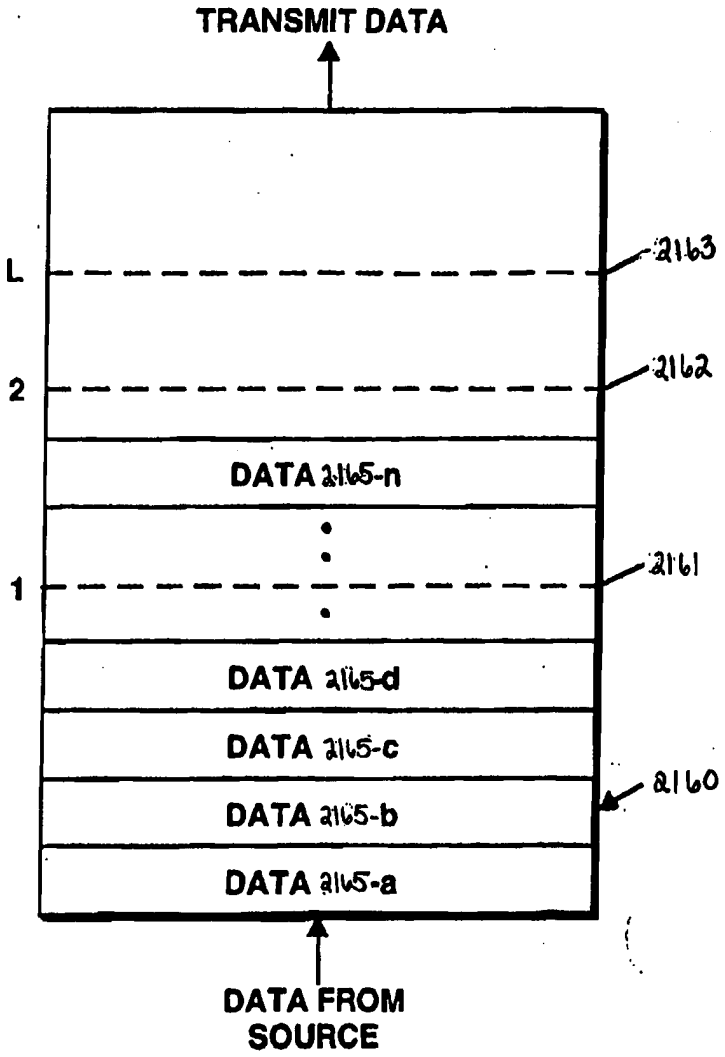


FIG. 21

REPLACEMENT DRAWING

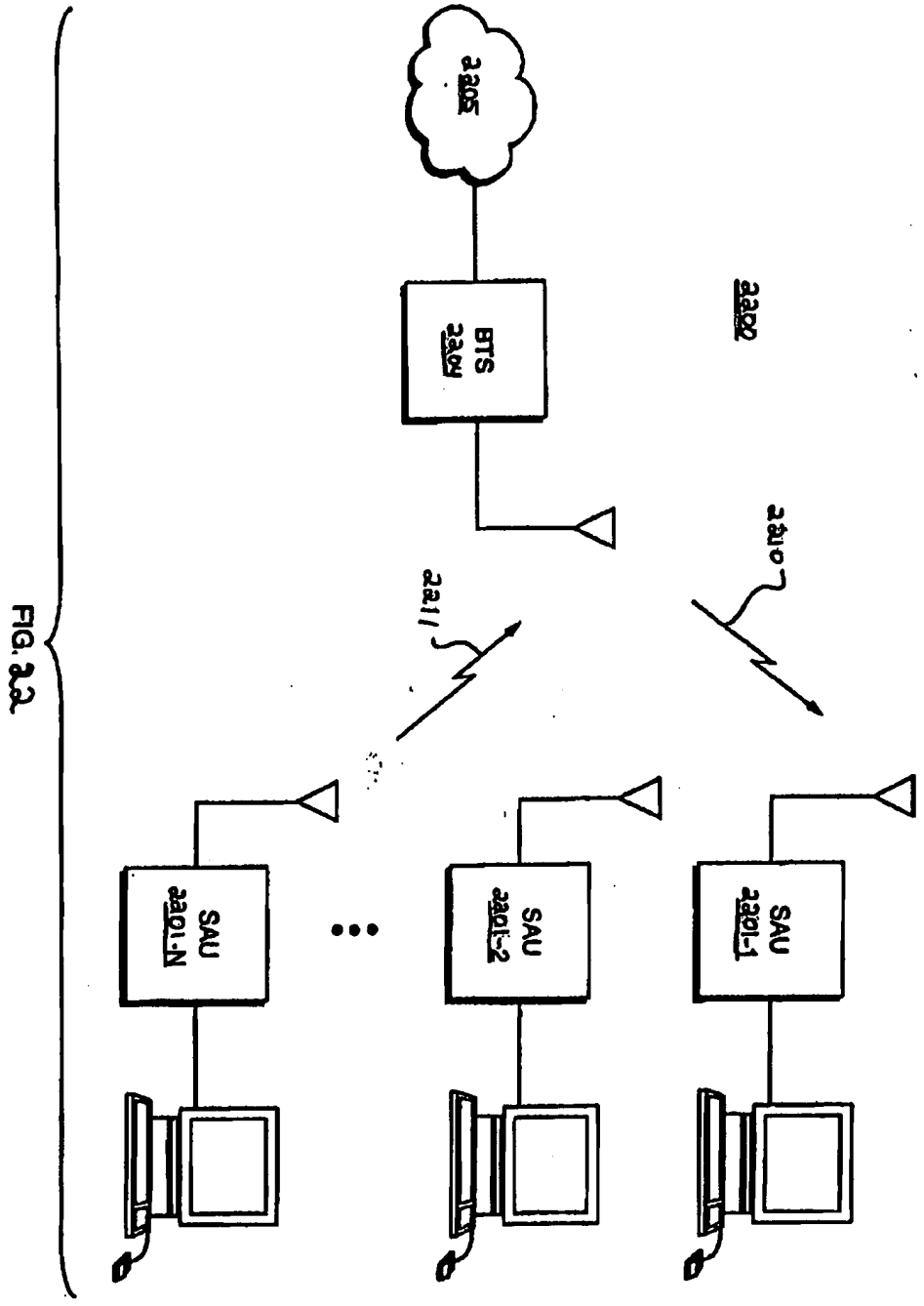


FIG. 2

REPLACEMENT DRAWING

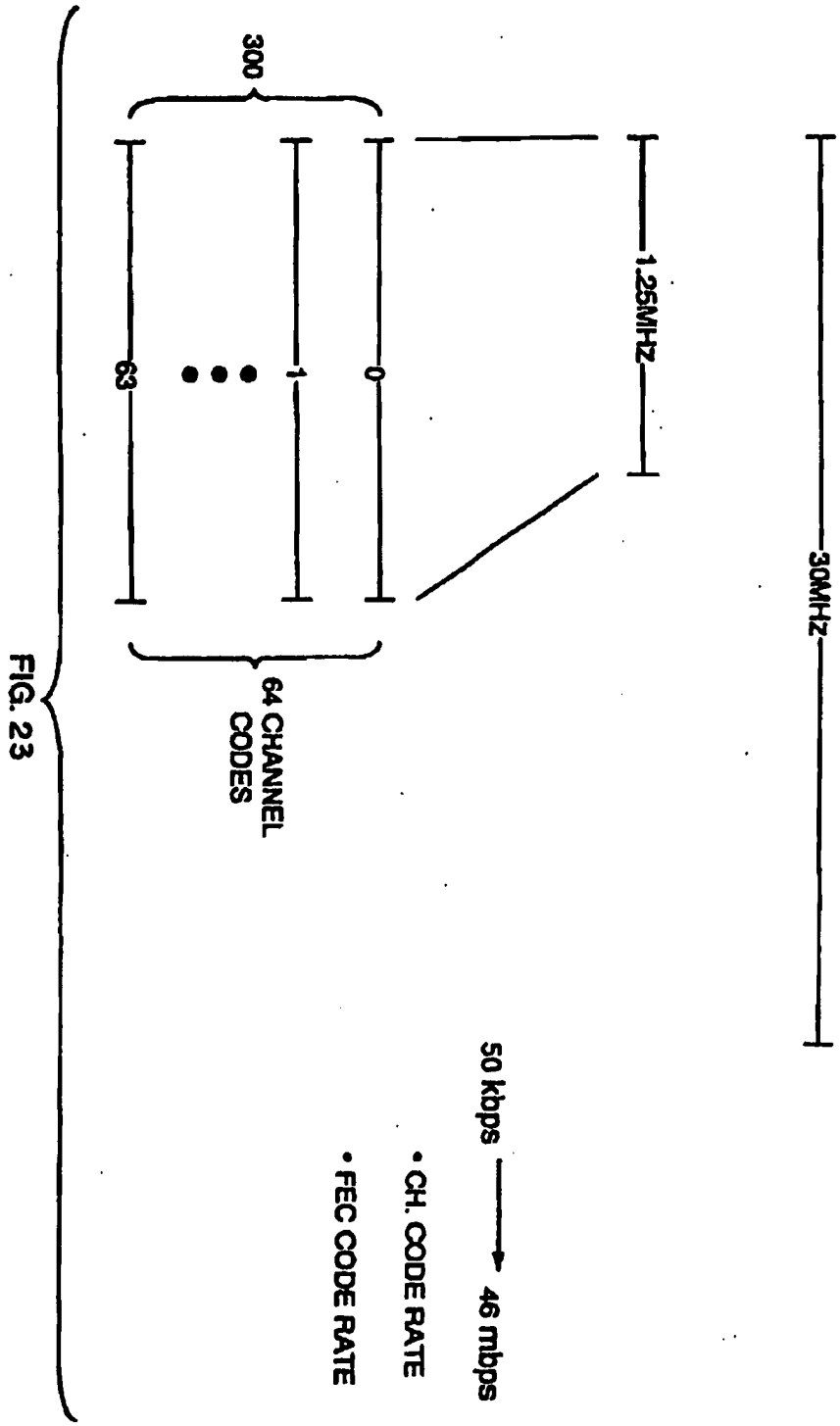


FIG. 23

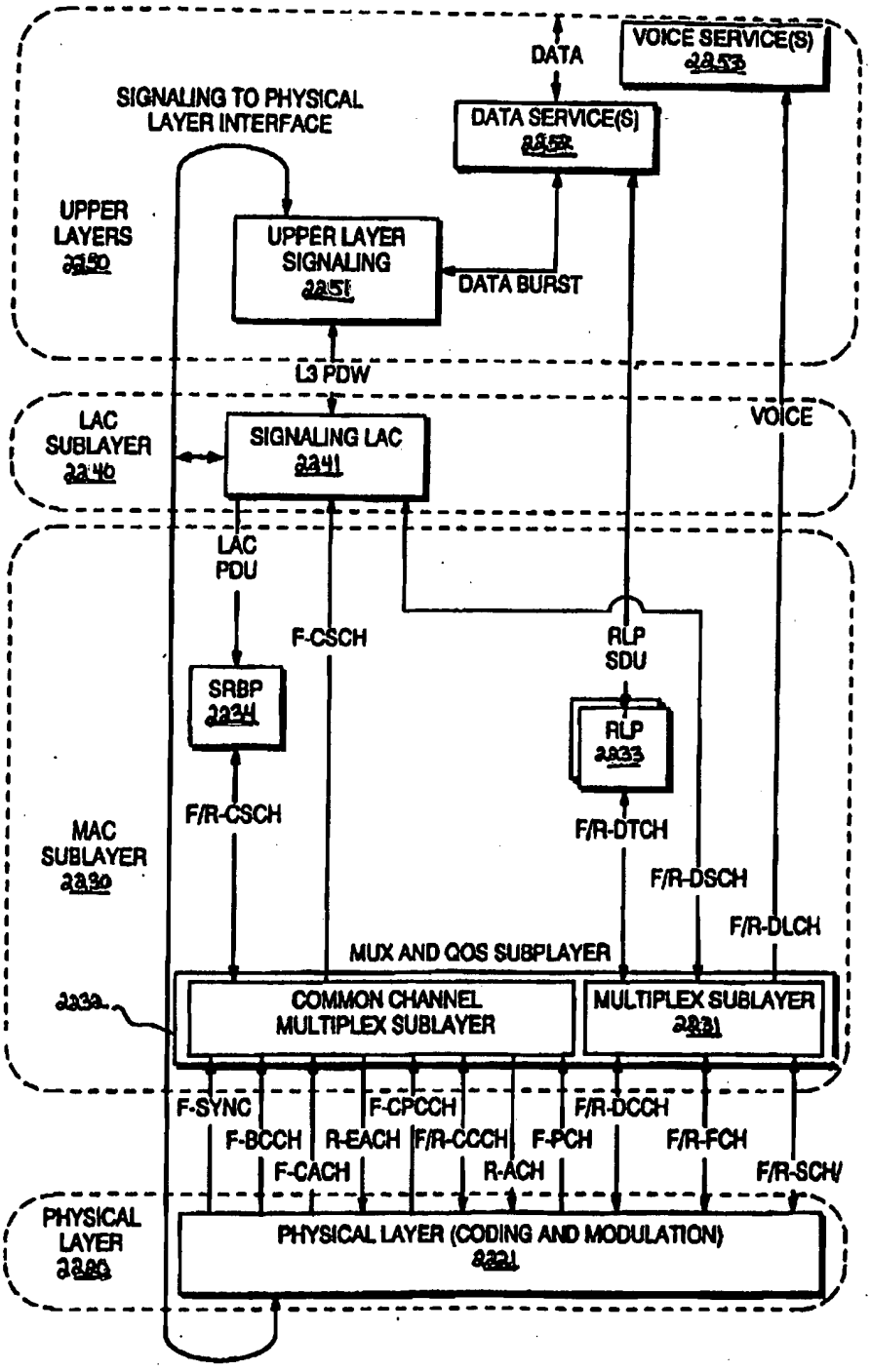

DATA
VOICE SERVICE(S)
2253
SIGNALING TO PHYSICAL LAYER INTERFACE
DATA SERVICE(S)
2252
UPPER LAYERS
2250
UPPER LAYER SIGNALING
2251
DATA BURST
L3 PDW
LAC SUBLAYER
2240
SIGNALING LAC
2241
VOICE
LAC PDU
F-CSCH
RLP SDU
SRBP
2234
RLP
2233
F/R-CSCH
F/R-DTCH
MAC SUBLAYER
2230
F/R-DSCH
F/R-DLCH
MUX AND QOS SUBPLAYER
2232
COMMON CHANNEL MULTIPLEX SUBLAYER
MULTIPLEX SUBLAYER
2231
F-SYNC
F-CPCCH
F/R-DCCH
F-BCCH
R-EACH
F/R-CCCH
F-PCH
F/R-FCH
F-CACH
R-ACH
F/R-SCH
PHYSICAL LAYER
2220
PHYSICAL LAYER (CODING AND MODULATION)
2221

FIG. 2H

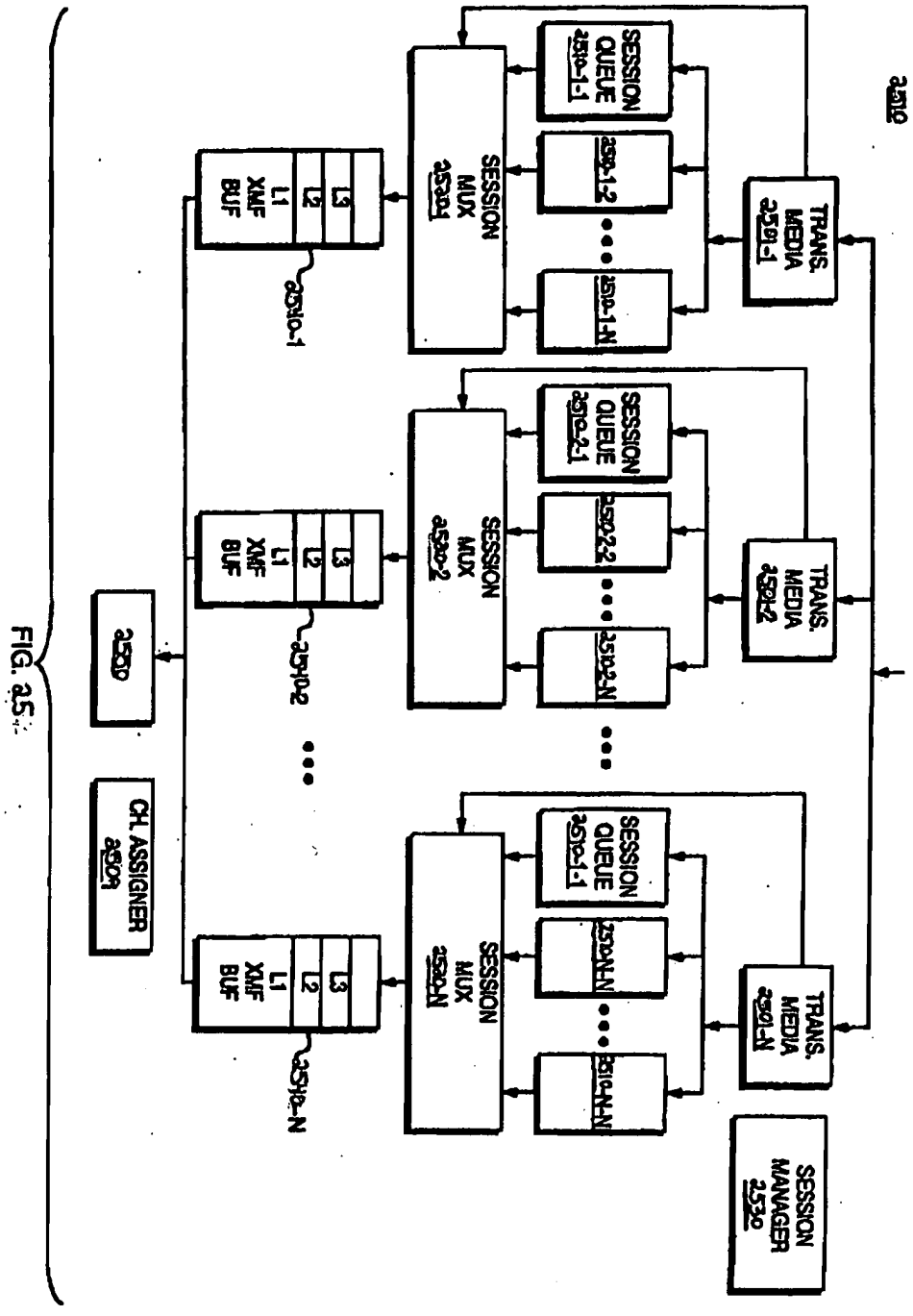

2510
TRANS. MEDIA 2591-1
TRANS. MEDIA 2591-2
TRANS. MEDIA 2591-N
SESSION MANAGER 2530
SESSION QUEUE 2515-1-1
SESSION QUEUE 2515-2-1
SESSION QUEUE 2515-N-1
SESSION MUX 2520-1
SESSION MUX 2520-2
SESSION MUX 2520-N
L1 XMF BUF
L2
L3
2510-1
2510-2
2510-N
CH. ASSIGNER 2509
2550

FIG. 25

REPLACEMENT DRAWING

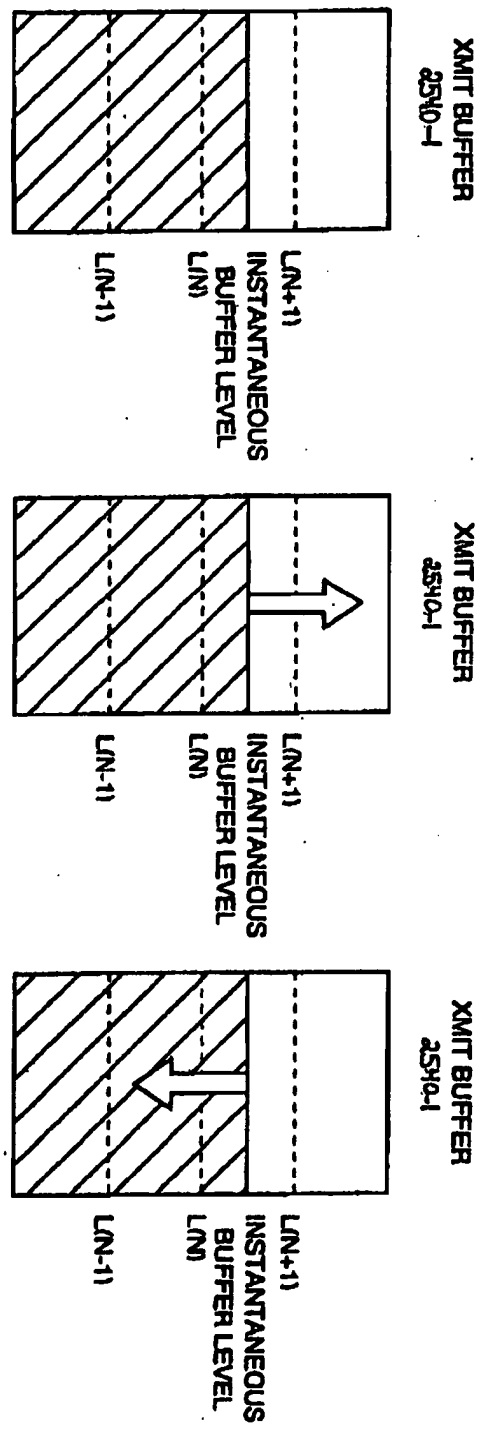


FIG. 26

FIG. 27

FIG. 28